Model of Environmental Law Knowledge for Undergraduate
รูปแบบของความรู้กฎหมายสิ่งแวดล้อมสำหรับนักศึกษาปริญญาตรี

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Abstract

The objective of this research was to develop a causal relationship model of environmental law affecting environmental conservation behavior through inspiration of public mind. The population consisted of 1,500 undergraduate students from Faculty of Law at Ubon Ratchathani University in the second semester academic year of 2013. The simple random sampling technique was employed to collect the sample for 404 undergraduate students. The questionnaire was used as a tool for data collection. Structural Equation model (SEM) was used for model verification.

The results revealed that when considering structural model confirmatory factors of Environmental Law Knowledge (ELK), it was possible to explain the variation of endogenous factors of Inspiration of Public Mind (INS) to cause Environmental Conservation Behavior (BEH) with 68.00 percent.

INS had the most effect to BEH with 0.72. Moreover, ELK was possible to be used to explain the variation of confirmatory factors of INS with 38.00 percent with the effect of 0.64.

Keywords : Model; Causal Relationship; Environmental Law Knowledge; Inspiration of Public Mind; Environmental Conservation Behavior

บทคัดย่อ

วัตถุประสงค์ในการวิจัยครั้งนี้ เป็นการพัฒนารูปแบบความสัมพันธ์เชิงโครงสร้างของความรู้กฎหมายสิ่งแวดล้อมที่มีผลต่อพฤติกรรมการอนุรักษ์สิ่งแวดล้อมผ่านแรงบันดาลใจในการมีจิตสาธารณะ ประชากรเป็นนักศึกษาปริญญาตรีคณะนิติศาสตร์ มหาวิทยาลัยอุบลราชธานี จำนวน 1,500 คน ในภาคการศึกษาที่ 2 ประจำปี 2556 ใช้เทคนิคการสุ่มอย่างง่ายในการเก็บรวมรวมกลุ่มตัวอย่างจำนวน 404 คน เครื่องมือการวิจัยเป็นแบบสอบถาม และใช้รูปแบบสมการเชิงโครงสร้างตรวจสอบความสอดคล้องของรูปแบบ

ผลการวิจัยพบว่าเมื่อพิจารณาสมการเชิงโครงสร้างขององค์ประกอบเชิงยืนยันของความรู้กฎหมายสิ่งแวดล้อมพบว่าสามารถอธิบายความแปรปรวนแรงบันดาลใจในการมีจิตสาธารณะ ที่ทำให้เกิดพฤติกรรมการอนุรักษ์สิ่งแวดล้อม ได้ร้อยละ 68.00 และแรงบันดาลใจในการมีจิตสาธารณะ มีอิทธิพลสูงสุดต่อ เกิดพฤติกรรมการอนุรักษ์สิ่งแวดล้อมเท่ากับ 0.72 นอกจากนี้ องค์ประกอบเชิงยืนยันของความรู้กฎหมายสิ่งแวดล้อมยังสามารถอธิบายความแปรปรวนแรงบันดาลใจในการมีจิตสาธารณะได้ร้อยละ 38.00 ด้วยอิทธิพลเท่ากับ 0.64

คำสำคัญ: รูปแบบ ความสัมพันธ์เชิงโครงสร้าง ความรู้กฎหมายสิ่งแวดล้อม แรงบันดาลใจในการมีจิตสาธารณะ พฤติกรรมการอนุรักษ์สิ่งแวดล้อม

1. INTRODUCTION

Human activities have destroyed habitats and reduced the quantity of lands available for other organisms by building, farming, exploiting the natural resources, threatening biodiversity, and discarding waste. These activities have polluted water, air and land through daily consumption, goods productions, energy utilization, forest destruction, tourism, and recreation; therefore these are the main causes of environmental problems. Such activities are not only negative effects to environmental and human life quality but it also causes the disputation among people who have interaction and have involved the environmental quality and environmental impacts [1][2][3].

Environmental conflict can be terminated by carrying on several procedures for instant; negotiation, arbitration or mediation, and prosecution. However, in Thailand, the prosecution of environmental cases were frequently the last option after the termination of dispute by others procedures; without effectiveness; therefore environmental disputations were considered by criminal, civil, and administrative courts [4]. The different problems in legal judgment of environmental cases have been studied and collected from opinion of lawyers, technocrats, and other researches. These problems were divided into the problem of legal result in general environmental civil case, in particular on natural resources case including liability to damage and compensation for damage on natural resources, and pollution case covering liability to damage and compensation for damage from pollution [5][6].

In Thailand, the environmental law was firstly issued in the Act of National Environmental Quality Promotion and Maintenance B.E. 2518, the second act was issued in B.E. 2521 and the third was issued in B.E. 2522. The present act is Act of National Environmental Quality Promotion and Maintenance B.E. 2535 comprising 115 sections. Nevertheless, currently the new act is under drafting process of formulation. This new act inquires the participation from Thai citizen and non-governmental organization, so it is not yet final act. Consequently, the environmental conflict at prosecution phase that is under the responsibility of civil, court or criminal court and administrative court depends on the detail of each case. Moreover, especially real case decision, it had many problems in different issues and had not yet provided especially real case decision, it had many problems in different issues and had not yet specific guideline for improvement, since most of the issues were directly decided by judge consideration and most issues were not yet made to be legislated. Furthermore, specialists had judgment that the proactive role of court had enough information that is able to verify the environmental cases to be applied for a similar case. Therefore, decision of environmental cases with standardized on international criterion, and decisions with awareness of environmental issues must be considered [3][5][6][7].

Accordingly, Thiengkamol has conducted the research on different topics by integrating inspiration of public consciousness or public mind; she found that it is a very significant variable as mediator to cause the environmental behavior change. Her diverse researched have proven that inspiration of public consciousness or public mind played vital role as mediator variable to induce the environmental conservation behavioral alteration such as on consumption behavior, energy conservation behavior and recycling behavior. The inspiration of public consciousness or public mind occurs from one's approaching and it differs from motivation because inspiration needs no rewards or any incentives. [7][8][9]. Concomitantly, the numerous studies were conducted by her colleagues, these have also confirmed that inspiration of public consciousness or public mind is an essential factor for environmental conservation behavior alteration in a wide range of target groups on pro- environmental behavior with integration of

environmental and management [2][5][7][10] [11][12][13][14][15][20].

It was rarely found the research operated environmental conservation behavior with consideration on environmental law knowledge through inspiration of public mind for environmental conservation. Therefore, environmental law knowledge includes Environmental Damage, Natural Resource Damage, Ecological Damage, Civil Liability., Criminal Liability and Administrative Liability [1][2][4][5][10][16] [17][18][19]. Nevertheless, there is no research to be holistically integrative performance on environmental law when compared to other factors affecting to environmental conservation behaviors. This research was intended to study by covering all factors relating as mentioned above to develop a model of environmental conservation behavior that are influenced by environmental law and inspiration of public mind for environmental conservation.

2. OBJECTIVE

The objective of research was to develop a causal relationship model of environmental law knowledge affecting environmental conservation behavior through inspiration of public mind.

3. METHODOLOGY

The research design was conducted step by step as follows:

1. The population was 1,500 undergraduate students of Faculty of Law of Ubon Ratchathani University in second semester of academic year of 2013. The simple random sampling technique was used to collect the samples of 404 undergraduate students from Faculty of Law of Ubon Ratchathani University.

2. The research instrument was the questionnaire with 88 items and it was used for data collection. The content and structural validity were determined by Item Objective Congruent (IOC) with 5 experts in the aspects of environmental law, environmental education, social science and social research methodology. The reliability was done by collecting the sample group of 50 undergraduate students of Rajabhat Ubon Ratchathani University which have similar characteristics to Ubon Ratchathani University students. The reliability was determined by Cronbach's Alpha. The reliability of environmental law knowledge, inspiration of public mind, environmental conservation behavior and the whole questionnaire were 0.810, 0.934, 0.929 and 0.965 respectively.

3. The descriptive statistics used were frequency, percentage, mean and standard deviation. The inferential statistics used was Structural Equation Model (SEM) and analyzed with LISREL version 8.30 by considering on Chi-Square value differs from zero with no statistical significant at 0.05 level or Chi-Square/df value with less or equal to 5, RMSEA (Root Mean Square Error Approximation) value and RMR (Root Mean Square Residual) with less than 0.05 including index level of model congruent value, GFI (Goodness of Fit Index) and critical number, and index level of model congruent value, AGFI (Adjust Goodness of Fit Index) between 0.90-1.00.

4. RESULTS

1. Results of General Characteristics of Undergraduate Student of Ubon Ratchathani University

The samples were 404 undergraduate students of Ubon Ratchathani University in first semester of academic year of 2013. Most of them were 19 year olds with 180 (44.55%), were female with 237 (58.66%), and paid respect to Buddhism with 402 (99.50%), lived outside municipality with 242 (59.90%) and their family characteristics was nuclear family with 279 (69.06%). They were first order children with 223 (55.20 %), traveled to university by bicycle with 213 (52.72%) and mean of income per month with 4,943.91 baht. They studied at Faculty of Law with 404 (100.00%). Most of them were studying at the first year with 225 (55.69 %), and their grade point average = 2.72.

2. Results of Effect among Variables in Model in Terms of Direct and Indirect Effects

1) Confirmatory factors of Environmental Law Knowledge (ELK) had direct effect to Inspiration of Public Mind (INS) and Environmental Conservation Behavior (BEH) with statistical significance at level of 0.01 with effect of 0.64 and 0.27. Moreover, confirmatory factors in aspect of Environmental Law Knowledge (ELK) had indirect effect to Environmental Conservation Behavior (BEH) with statistical significance at level of 0.01 with effect of 0.46.

2) Confirmatory factors of Inspiration of Public Mind (INS) had direct effect to Environmental Conservation Behavior (BEH) with statistical significance at level of 0.01 with effect of 0.72.

3) Considering on structural model confirmatory factors of Environmental Law Knowledge (ELK) was able to explain the variation of endogenous factors of Inspiration of Inspiration of Public Mind (INS) to cause Environmental Conservation Behavior (BEH) with 68.00 percents as the following in equation (1).

BEH = 0.72*INS + 0.27*ELK .....(1)

(R^2 = 0.68)

Moreover, confirmatory factors Environmental Law Knowledge (ELK) could be used to explain the variation of confirmatory factors of Inspiration of Public Mind (INS) with 38.00 percents. Therefore, the equation can be written as the following equation (2).

INS = 0.64*ELK .....(2)

(R^2 = 0.38)

Equation (2) factor that had the effect to Inspiration of Public Mind (INS) to cause Environmental Conservation Behavior (BEH) was Environmental Law Knowledge (ELK) with the effect of 0.64. This could be used to explain the variation of Inspiration of Environmental Conservation with 36.00 percent.

4) Considering on Chi-Square value/df was 1.848 that was less than 5, therefore it was accepted that hypothetical model of research was congruent to empirical data. Moreover, it was also considered on Goodness of Fit Index (GFI) and Adjust Goodness of Fit Index (AGFI) were 0.96 and 0.93 respectively (GFI > 0.90 and AGFI > 0.90), RMSEA <0.05 (0.046), RMR <0.05 (0.028) and critical number = 297.46 which was more than 200. It indicated that model was congruent to empirical data.

The results of analysis of causal relationship model and analysis of path effect are presented in Figure 1 and Table 1.

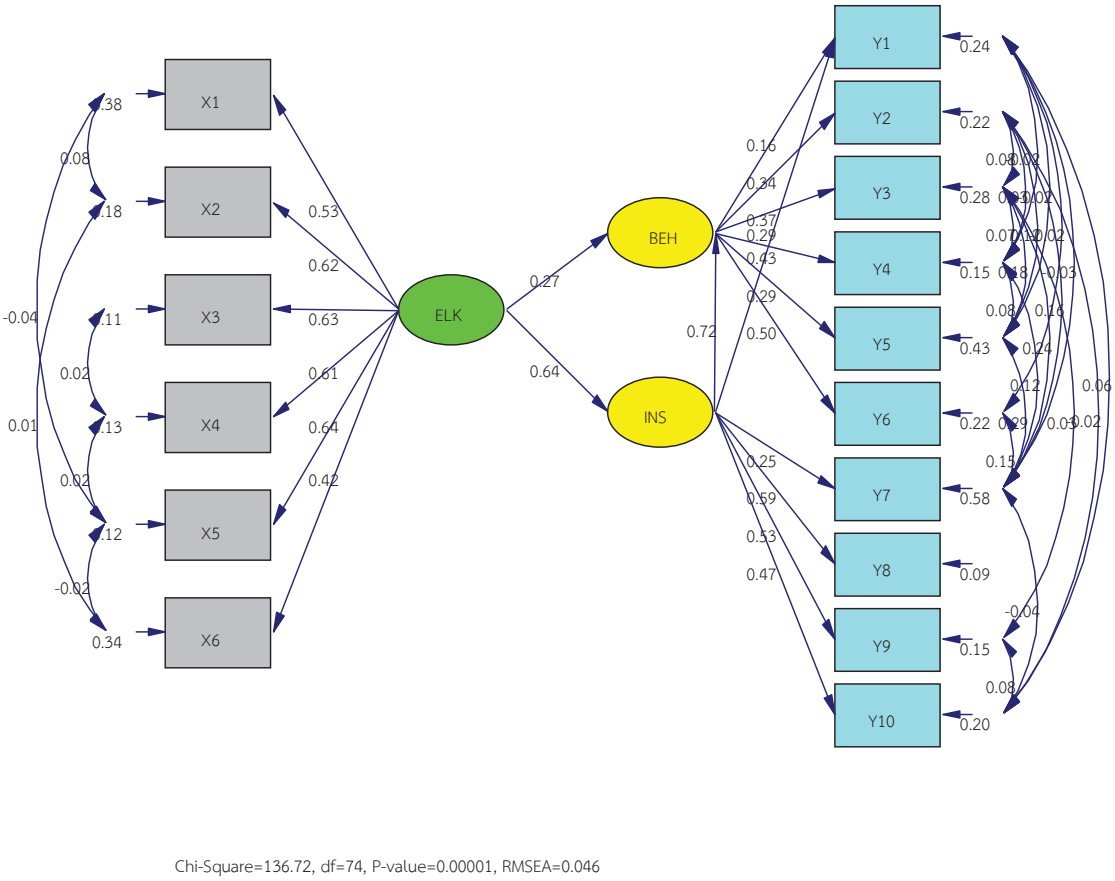

Figure 1 Causal Relationship Model of Environmental Law

Table 1 Direct, Indirect and Total Effects of ELK Affecting BEH through INS

Causal variable	Result variables					
	INS			BEH		
	TE	IE	DE	TE	IE	DE
ELK	0.64** (0.030)	-	0.64** (0.030)	0.632** (0.070)	0.46** (0.070)	0.27 (0.051)
INS	-	-	-	0.72** (0.033)	-	0.72** (0.033)
χ^2 = 136.72; df =74			CN = 297.46		χ^2/df = 1.848	
GFI = 0.95; AGFI = 0.92			RMSEA = 0.046		RMR = 0.017	

TE : Total Effect, IE : Indirect Effect, DE: Direct Effect

From table 1, it showed that the ELK had direct, indirect and total effect to BEH and it also had direct effect to INS. INS had direct effect to BEH.

5. DISCUSSION

The findings indicated that Environmental Law Knowledge (ELK) had direct effect to Inspiration of Public Mind (INS) and Environmental Conservation Behavior (BEH) with statistical significance at level of 0.01 with effect of 0.64 and 0.27. Moreover. The observed variable of Ecological Damage (X3), was highest correlation to Environmental Law Knowledge (ELK) with 0.71. It is obviously seen that the samples who are undergraduate students are

realized on the essential of ecological damage as critical issue if the ecological system was destroyed then it might be cause the consequences of different problems to impact human quality of life because it is an origin of all living creatures sustainably. Therefore, to accomplish the sustainable development they must start to conserve ecological conservation as priority. Moreover, Environmental Damage (X1), and Natural Resource Damage (X2), had moderate correlation to Environmental Law Knowledge (ELK) with 0.44 and 0.41 respectively. These are also subsequent important factors that should be paid attention to practice for natural resources and environmental conservation in order to meet the genuine sustainable development with integration of environmental law knowledge because environmental damage and natural resource damage are also essential knowledge for law students in the future of their career practice. This indicated that to challenge undergraduate students to participate in environmental conservation projects and activities with pro-environmental behavior, this will decrease the environmental problems in diverse facets when considering on other environmental law knowledge about environmental damage, natural resource damage, ecological damage, civil liability, criminal liability and administrative liability which are all important factors to maintain environment, natural resources and ecosystem for Ubon Ratchathani University.

However, Inspiration of Public Mind (INS) was revealed as a very essential endogenous latent variable affected to result variable of Environmental Conservation Behavior (BEH) with the prediction power with 0.72. Meanwhile exogenous latent variable of Environmental Law Knowledge (ELK) influenced to endogenous latent variable Inspiration of Public Mind (INS) as mediator variable with the rather high prediction power with 0.64. Moreover, observed variables of Person as Role Model (Y7), Impressive Event (Y8), Impressive Environment (Y9), and Diverse Media Receptions (Y10) also had closely similar prediction power to endogenous latent variable of Inspiration of Public Mind (INS) with 0.33, 0.11, 0.40 and 0.58.

Additionally, observed variables of Consumption Behavior (Y1), Energy Conservation Behavior (Y2), Recycling Behavior (Y3), Waste Management Behavior (Y4), Traveling Behavior (Y5), and Environmental Knowledge Transferring Behavior (Y6), can be used to predict Environmental Conservation Behaviors with 0.36, 0.07, 0.85, 1.73, 0.20, and 0.27. It is obviously seen that the Waste Management Behavior (Y4) was the highest prediction power with 1.73 and subsequences were Recycling Behavior (Y3) with 0.85, Consumption Behavior (Y1) with 0.36, Environmental Knowledge Transferring Behavior (Y6) with 0.27, Traveling Behavior (Y5) and Energy Conservation Behavior (Y2) with 0.07. It can be explained that most undergraduate students performed better waste management behavior and recycling behavior but they had rather poor energy conservation behavior.

These results of inspiration of public mind and environmental conservation behavior were congruent to Thiengkamol concept [5][10][19][20] that the results illustrated that inspiration of public mind influencing to environmental conservation behavior to carry out better environmental behaviors among consumption behavior, energy conservation behavior, waste management behavior, traveling behavior and knowledge transferring and supporting for environmental conservation when they had real practice through environmental conservation with inspiration of public mind for environmental conservation.

However, environmental law knowledge and inspiration of public mind might be introduced to apply in higher education institute like as college and university across the country to challenge the undergraduate students, in particular the law student to take notice on the importance of environmental law enforcement seriously in order to protect the ecosystem, natural resources and

environment and remedy the environmental problems [1][2][5][8][11][14][20].

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